AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
April 29-30, 2002
HISTORY RECORD

FAA Control # 02-01-243

Subject: Holding Pattern Definition

Background/Discussion: The current FAA Order 7130.3, *Holding Pattern Criteria*, specifies the length of the holding pattern to be the length of the outbound leg. This works well for the purposes of procedure construction to specify the size of the holding pattern airspace to be protected. However, it does not help the pilot to determine when he/she is at the end of the outbound leg when it is a distance from where the outbound leg began.

There are four potential ways to measure a holding pattern:

1. Length of the outbound leg - Pilots have no way of being able to determine from current cockpit instrumentation when they are at that location.

2. Length of the inbound leg - This is the current method of determining holding pattern size for holds that have timing. The pilot, according to the AIM, is supposed to adjust the length of the outbound leg so as to have the inbound leg at the specified time. This is not very effective because it takes about two or three turns in the holding pattern to finally get it close to the correct timing.

3. Distance in which the holding pattern is to be completed. This is the way pilots determine the distance for completing procedure turns. This method is OK but can lead to turns outside protected airspace when strong winds occur. It is not very precise.

4. Distance from the holding fix to the point where the outbound leg is terminated. This is the only means that current GPS avionics can measure where they are.

Recommendation: Do not change 7130.3 alone since it is a good way for procedure specialists to define holds that keep the aircraft within protected airspace. However, recommend that the AIM and other appropriate publications specify that pilots determine the point where they complete the outbound leg by using their GPS avionics. When the GPS displays the appropriate distance (typically 4 NM) when flying the outbound leg of the holding pattern, that is the point where they turn back inbound to the holding fix.

Comments: This recommendation affects the AIM and AIP.

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INITIAL DISCUSSION (Meeting 02-01): New issue presented by Jim Terpstra, Jeppesen regarding holding pattern definition for RNAV holding. Jim recommends that AIM guidance similar to that provided for DME holding (see AIM figures 5-3-5 and 5-3-6) be provided for RNAV/GPS holding. The group consensus was favorable. Norm LeFevre agreed to coordinate the issue with AFS-410 and make AIM revisions accordingly. ACTION: AFS-420.

MEETING 02-02: Tom Schneider, AFS-420, briefed that Flight Standards agrees with the consensus reached at the last ACF. Tom circulated a proposed AIM change, prepared by Steve Jackson, AFS-420, which will be forwarded for publication in AIM Change 3, effective August 7, 2003. The change will revise paragraph 5-3-7j5 as well as the note below Figure 5-3-5 to reflect that GPS and DME holding procedures are identical. The issue will remain open pending AIM publication. ACTION: AFS-420.

MEETING 03-01: Tom Schneider, AFS-420, briefed that all work has been complete and the change submitted for AIM publication in Change 3 on the August 7 effective date. The change will revise paragraph 5-3-7j5 as well as the note below Figure 5-3-5 to reflect that GPS and DME holding procedures are identical. The issue will remain open pending AIM publication. ACTION: AFS-420.
